## Geographic Distances program

## Taraka Rama

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## 1 Instructions

This program is useful for computing the geographic distance from a African origin point to a family's homeland. It needs three files as input

- source-coordinates: Has the source coordinates and the continent details of the origin point.
- homelands-coordinates: Has the source coordinates of the families homelands. It could also have the individual languages' coordinates as the input. When computing geographic distances from languages' source, the population information also has to be added.
- waypoints: Has the waypoints information for constraining the geographic paths over the globe.

The readLand48.py program is useful for cleaning the land48.txt file. The user needs to install networkx  $^1$  package for the program to work. The program runs under Python 2.7. The program uses some modules from gislib.py  $^2$  to compute the geographic distances on globe.

http://networkx.lanl.gov/

<sup>&</sup>lt;sup>2</sup>http://code.google.com/p/geolocator